

FINAL DESIGN

FROM =

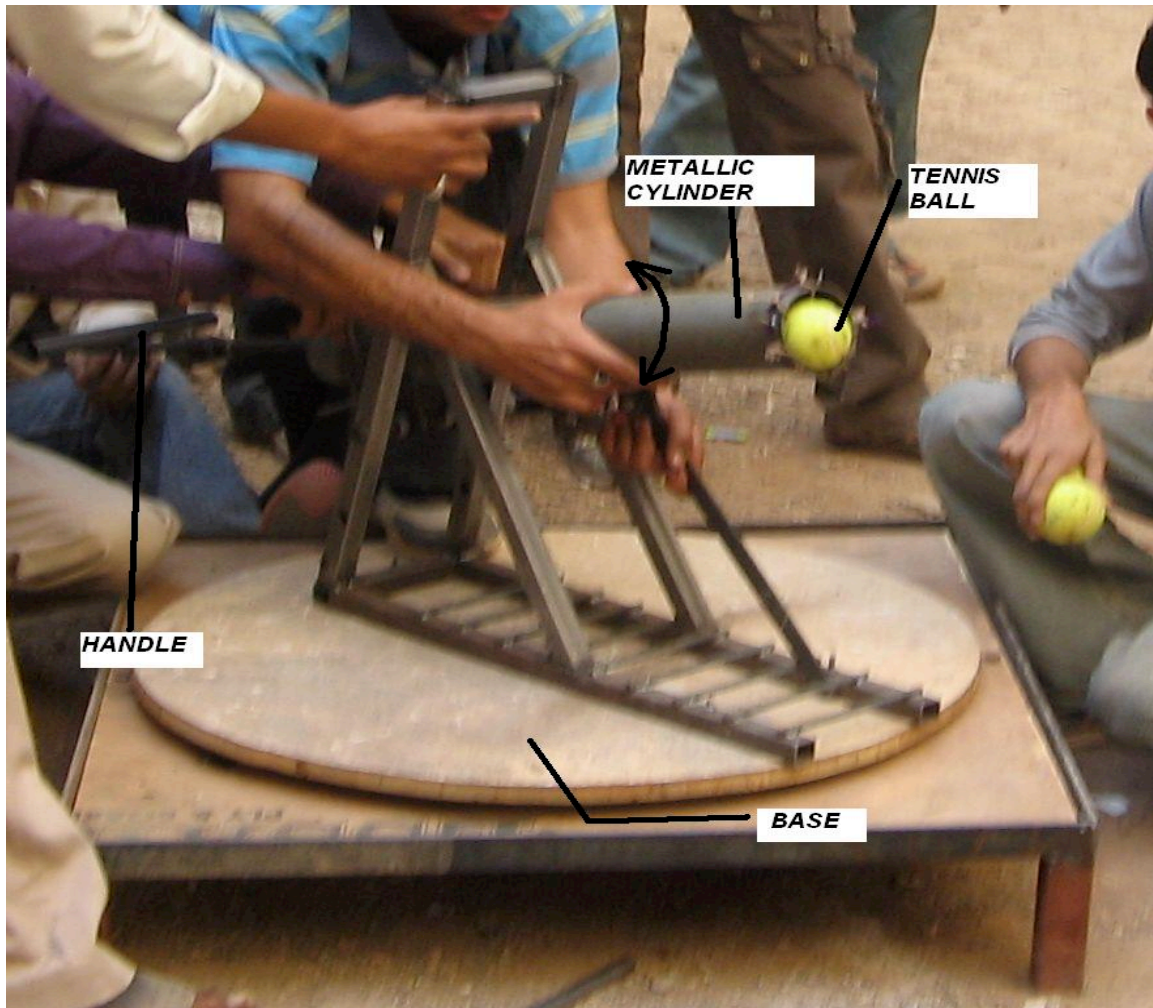
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PURPOSE=

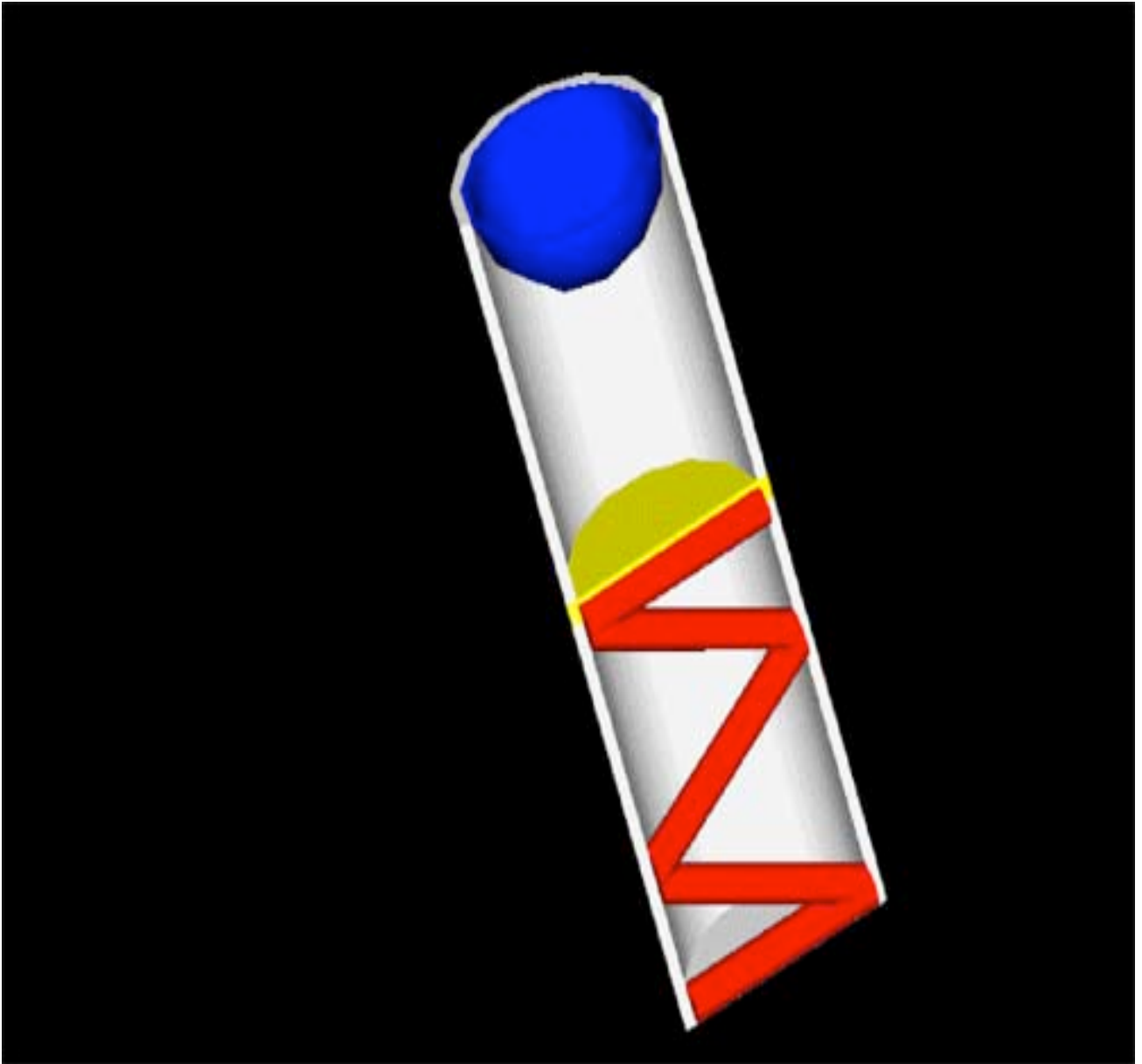
TO DEVELOP AN INSTRUMENT(PROJECTOR) WHICH
WILL ALLOW TO PROJECT AN OBJECT BY SPECIFIC ANGLE
AND FORCE MAGNITUDE, SO AS TO OBTAIN MAXIMUM
EXCAVATION OF LUNAR SURFACE BY MAKING CRATER IN
LUNAR SOIL.

IN THIS EXPERIMENT I HAVE MADE TWO MODELS
FOR PROJECTION OF TENNIS BALLS.

MODEL 1:-



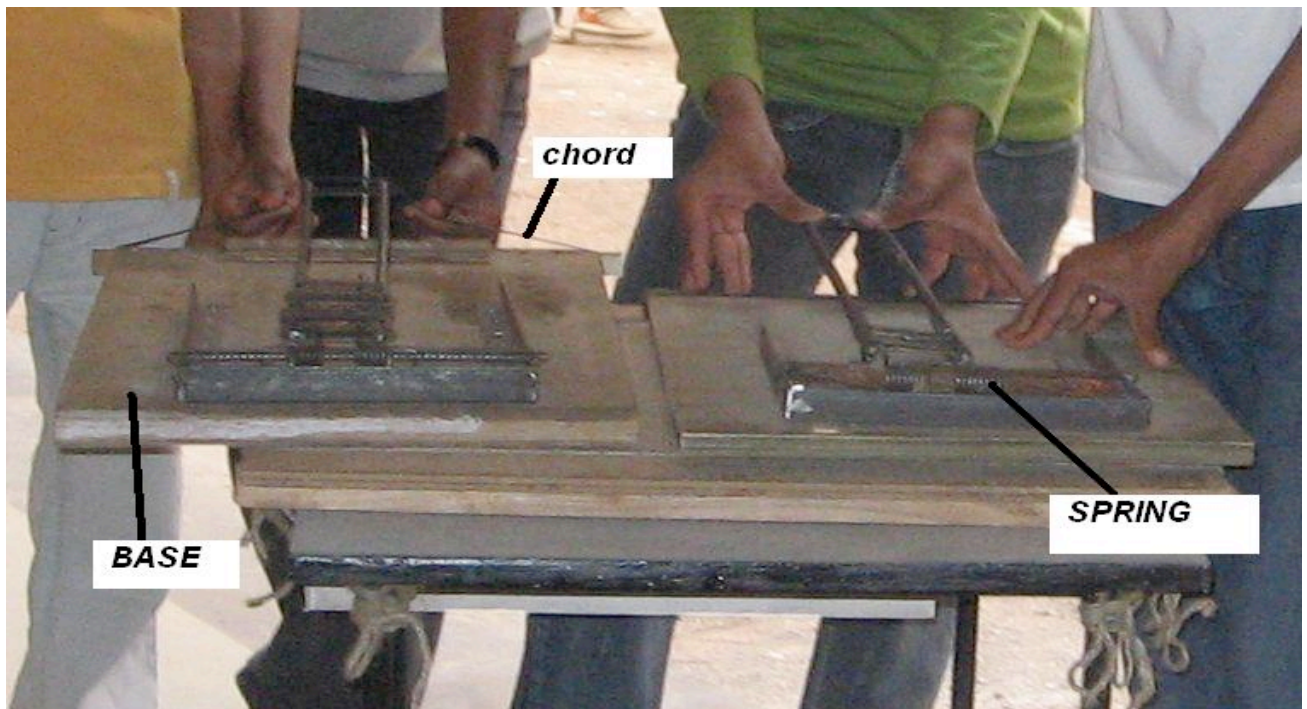
AS SHOWN IN PICTURE IT CONSIST OF INTENAL MECHANISM AS I HAVE GIVEN IN PRELIMINARY DESIGN.



MODEL HAS DIMENSION 1M*1M*1M HEIGHT.

- 1. METALLIC CYLINDER IS HINGED TO FRAME SO THAT IT CAN HAVE OSCILATORY MOTION ABOUT HINGE.**
- 2. BASE IS FREE TO ROTATE 360 DEGREE ABOUT ITS CENTRE.**
- 3. USING HANDLE WE CAN COMPRESS SPRING , AND AFTER PRESSING SPRING RELEASE TRIGGER, BALL GET HITTED TO HAVE PROJECTILE MOTION.**

MODEL 2:-



MY SECOND MODEL CONSIST OF SIMPLE MECHANISM. METTALIC RODS ARE PROVIDED WITH SPRINGS , TENNIS BALLS ARE MOUNTED AT TOP AND AFTER RELEASING CHORD IT GET DEVELOPED AS SHOWN IN PICTURE BELOW.



THIS ACTION CAUSES THROWING OF TENNIS BALL , HAVING PROJECTILE MOTION.

CRATER FORMED

I OBSERVED CRATER FORMED BY IMPACT OF TENNIS BALL ON REGULAR SOIL, BY WHICH I GET THAT IF WE THROW BALL WITH ACUTE ANGLE GREATER THAN 45 DEG. WITH RESPECT TO HORIZONTAL ,CRATER OBTAIN IS HAVING MORE DIAMETER AND DEEP BUT IT CAN OBTAIN AT LESS DISTANCE FROM PROJECTOR , NOW IF WE ADJUST AN ACUTE ANGLE LESS THAN 45 DEG. WITH RESPECT TO HORIZONTAL , CRATER OBTAIN AT LARGE DISTANCE FROM PROJECTOR BUT HAVE LESS DIAMETER AND LESS DEEP THAN PREVIOUS CASE.

SO I HAVE CONCLUDED THAT 45 DEG. WITH RESPECT TO HORIZONTAL WILL GIVE GOOD RESULT.

I AM THANKFUL TO NASA TO GIVE ME APPORTUNITY TO SHARE MY PROJECT WITH PEOPLE ALL AROUND WORLD.